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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/827,088

04/19/2004

Kuang-Kai Liu

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EXAMINER

HANRAHAN, BENEDICT L

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/827,088	Applicant(s) LIU, KUANG-KAI	
	Examiner BENEDICT L.C. HANRAHAN	Art Unit 3761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/10/2009 and 10/1/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3761

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castello (US 4,931,051) in view of Raykovitz (US 5,342,861) and Townsend (US 4,287,153).

3. Regarding claims 1 and 8, Castello teaches a diaper having a backsheet (190), a topsheet (170) and an absorbent core (180). Castello teaches a color wetness indicator printed onto a surface of a backsheet of the diaper (col. 2, lines 30-62). Castello further teaches a coating or varnish over the wetness indicator to prevent premature activation (col. 5, lines 14-21). Castello uses hydratable salts which must be preferably combined with binder to reduce toxicity and any contact between the salts and a wearer's skin avoided (abstract; col. 3, lines 21-30). Castello's preferred hydratable salt is copper sulfate, which is a skin irritant (col. 3, lines 61-65)(see, e.g., International Resources Inc., Material Safety Data Sheet, Copper Sulfate, January 2001, www.iri-us.com/msds/copper.html).

Castello does describe that a color can be become visible after reacting with water (Col 4, lines 32-35), which means that the color was invisible to the unaided eye before reacting with water.

Art Unit: 3761

Castello does not expressly disclose that the color wetness indicator is hydrolyzable and under goes a hydrolytic reaction upon wetting.

Raykovitz discloses a disposable article that has a wetness indicating agent that is substantially invisible in the dry composition but becomes a vivid color when wet (Col 3, lines 46-50 and 66-68 and Col 1, lines 9-11 and 18-21).

Towsend teaches an absorbent article (1) having a water indicator graphics (2) made of a latent color pigment material that undergoes a hydrolytic reaction in response to urine or saline water such that the graphic becomes visible (abstract; page 4, lines 13-65; page 9 line 49-page 11, line 19; page 12, lines 1-52) Towsend's indicator uses water-insoluble polymeric ion exchanger and a water-insoluble polymeric exchanged-ion indicator, which don't have the same toxicity issues as Castello's hydratable salts. Furthermore, Towsend's indicator is non-leachable.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to substitute the graphics compositions of Towsend and Raykovitz for use as the wetness indicator material in the absorbent articles of Castello in order to provide a material that is known to be effective for that purpose and which lacks the toxicity of some hydratable salts.

4. Regarding claims 2, Towsend teaches the use of a liquid carrier for the dye/pigment and a solvent (col. 7, lines 1-6). Towsend does not disclose the % by weight of these materials.

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955).

Art Unit: 3761

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In the instant case, increasing the amount of dye would increase the visibility of an image formed by the dye.

5. Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz and Townsend in view of Timmons et al. (US 4,022,211; hereinafter "Timmons").

Castello in view of Raykovitz and Townsend do not disclose alcohol as a solvent.

Timmons discloses the use of alcohol as a solvent.

At the time of the invention it would have been obvious to one of ordinary skill in the art to select the alcohol of Timmons as a solvent in the device of Castello, Raykovitz and Townsend in order to provide a material that is known in the art to be suitable for that purpose.

6. Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz and Townsend in view of Schleinz et al. (US 5,458,590 A; hereinafter "Schleinz").

Castello, Raykovitz and Townsend do not teach the claimed acetate(s).

Schleinz teaches an ink blend comprising n-propyl acetate (col. 2, lines 44-67) or isopropyl alcohol (col. 5, lines 27-45) which improves crockfastness.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the acetate of Schleinz in the wetness indicator of Castello, Raykovitz and Townsend in order to provide improved adhesion of the ink to the substrate.

7. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz and Townsend in view of Ito et al. (US 5,595,754 A; hereinafter "Ito").

Art Unit: 3761

Castello, Raykovitz and Townsend do not teach the claimed coating materials.

Ito teaches absorbent color-changing sheets which use polyamides as resins in an impermeable layer (col. 6, lines 33 and 34).

At the time of the invention it would have been obvious to one of ordinary skill in the art to select the polyamide construction of Ito to use as an impermeable layer in the device of Castello, Raykovitz and Townsend in order to provide a construction known in the art to be suitable for this purpose. MPEP § 2144.07.

8. Claims 7 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz and Townsend in view of Olson et al. (WO 00/76442 A1; hereinafter "Olson").

Regarding claim 11, Raykovitz discloses a disposable article that has a wetness indicating agent that is substantially invisible in the dry composition but becomes a vivid color when wet (Col 3, lines 46-50 and 66-68 and Col 1, lines 9-11 and 18-21). Townsend discloses that the wetness indicator color is latent and becomes visible after exposure to water via hydrolysis (Townsend, Col 2, lines 5-42 and Col 8, lines 57-64).

Regarding claims 7 and 11, Castello, Raykovitz and Townsend do not teach a wetness indicator printed on an inner surface.

Olson teaches an absorbent article having a changing wetness indicator printed on an inner surface of a backsheet (page 13, lines 8-12).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the graphic on the inner surface as taught by Olson with the absorbent article of Castello, Raykovitz and Townsend in order to provide partial protection from exterior humidity.

Art Unit: 3761

9. Claims 9 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz and Townsend as in view of Polansky et al. (US 4,249,532; hereinafter "Polansky").

Castello, Raykovitz and Townsend do not teach varnish disposed beneath the color responsive composition.

Polansky teaches a seal coat underlying a graphic design as shown in Figure 3.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to provide a seal coat beneath a graphic as taught by Polansky in combination with the wetness indicating article of Castello, Raykovitz and Townsend in order to provide additional means of preventing premature activation.

10. Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz and Townsend in view of Perrault et al. (US 4,717,378; hereinafter "Perrault").

Castello, Raykovitz and Townsend do not teach the specific type of dye. Perrault teaches a method for detecting dehydration of a hydrogel which includes using D&C Red #27 (col. 2, lines 19-25). This particular dye is skin-contact grade.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the indicator dye of Perrault in the device of Castello, Raykovitz and Townsend in order to provide a substance known to be effective for that purpose and being of skin contact grade.

11. Claims 14 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz and Townsend in view of Howell (US 5,389,093).

Art Unit: 3761

Regarding claim 14, Raykovitz discloses a disposable article that has a wetness indicating agent that is substantially invisible in the dry composition but becomes a vivid color when wet (Col 3, lines 46-50 and 66-68 and Col 1, lines 9-11 and 18-21).

Regarding claims 14 and 16, Castello, Raykovitz and Townsend do not disclose directly color composition that forms a carboxylic acid upon wetting.

Howell teaches a wetness indicating diaper that uses a thermochromatic ink that changes color in response to the change in temperature triggered by the presence of urine. The thermochromatic ink comprises a fatty acid. Fatty acids are a type of carboxylic acid. (See Hawley's Condensed Dictionary, 14th edition, 2002). The thermochromatic ink allows the diaper to be reusable, thus avoiding waste and cost associated with disposable diapers (abstract; col. 6, lines 13-29).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the thermochromatic dye of Howell in the absorbent article of Castello, Raykovitz and Townsend in order to allow the article to be reusable and thus more economical than a disposable article.

12. Claims 12 and 15 rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Raykovitz, Townsend, and Howell in view of Pierce et al (WO 00/76438).

Castello in view of Townsend, Raykovitz and Howell do not expressly disclose a breathable backsheet.

Pierce teaches a breathable backsheet (40) (page 16, line 17-page 17, line 3). This makes the absorbent article more comfortable to wear, touch.

Art Unit: 3761

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the breathable backsheet of Pierce with the absorbent article of Castello, Townsend, Raykovitz and Howell in order to provide for user comfort.

Response to Arguments

13. Applicant's arguments filed 9/10/2009 have been fully considered but they are not persuasive. In response to Applicant's piecemeal analysis of the Castello, Raykovitz, and Townsend, one cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references. Applicant argues that Castello does not disclose a hydrolyzable color composition. Examiner agrees and stated this position in the previous Office Action. This argument is not addressed. Applicant argues that Townsend does not disclose a hydrolysis reaction that has a color composition go from invisible to visible. Examiner disagrees. Townsend discloses that the color is latent and becomes visible after exposure to water (Townsend, Col 8, lines 57-64). Applicant argues that Polansky does not teach a seal coat underneath a color composition. Examiner disagrees. Polansky teaches a seal coat that is located beneath the printed design on the absorbent article as shown in Figure 3 of Polansky.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

Art Unit: 3761

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENEDICT L.C. HANRAHAN whose telephone number is (571)270-7854. The examiner can normally be reached on Monday-Friday, 8AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tatyana Zalukaeva can be reached on (571) 272-1115. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. L. H./

Examiner, Art Unit 3761

Application/Control Number: 10/827,088

Page 10

Art Unit: 3761

/Nicholas D Lucchesi/

Supervisory Patent Examiner, Art Unit 3763